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July 30, 1999

HAND-DELIVERED
Ms. Magalie Roman Salas
Secretary
Office of the Secretary
FEDERAL COMMUNICATIONS COMMISSION
445 12th Street, S.W.
TW-A325
Washington, D.C. 20554.

Re: *The Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band* (IB Docket No. 99-81) –
Reply Comments of Iridium LLC

Dear Madam Secretary:

On July 26, 1999, we submitted Reply Comments in the above-referenced proceeding on behalf of Iridium LLC ("Iridium") using the Commission's Electronic Comment Filing System ("ECFS"). It has subsequently come to our attention that, although the document was transmitted to the Commission in an acceptable WordPerfect file format, when the ECFS converted the document into the Adobe portable document format ("PDF") for retrieval on the system, it improperly processed certain characters and codes in the file producing serious text, formatting and pagination problems in the Comments that were ultimately made available to the public. In order to remedy these problems, and pursuant to the recommendation of the Secretary's office, I enclose five copies of Iridium's Reply Comments in correct form and request that they be accepted as timely filed and entered into the ECFS.

Kindly stamp and return to this office the enclosed receipt copy of the filing designated for that purpose. You may direct any questions concerning this filing to the undersigned.

Respectfully submitted,

Eric T. Werner

Enclosures

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
The Establishment of Policies	)	IB Docket No. 99-81
and Service Rules for the Mobile	)	RM-9328
Satellite Service in the 2 GHz Band	)	

JUL 30 1999

To: The Commission

REPLY COMMENTS OF IRIDIUM LLC

IRIDIUM LLC

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July 26, 1999

SUMMARY

Herein, Iridium LLC ("Iridium") replies to the comments submitted in the above-captioned proceeding. Iridium's Comments set forth a number of recommendations intended to assist the Commission in developing a licensing and regulatory framework that best serves the public interest by facilitating the rapid deployment of competitive, technologically-advanced new mobile satellite services. Specifically, Iridium urged the Commission to adopt the Traditional Band Plan approach for licensing 2 GHz MSS systems. Iridium also urged the Commission to explore making additional global MSS spectrum available in the U.S. and to work with officials in other administrations around the world to ensure that U.S. MSS licensees will have access to sufficient spectrum in other countries to enable them to implement their systems.

The comments filed by the parties with the greatest interest in this proceeding – the applicants – largely support many if not most of the views expressed by Iridium in its Comments. All applicants appear willing to be flexible with their proposals so that the Commission may assign spectrum to all qualified applicants, thus avoiding mutual exclusivity. With respect to the specific technical solutions or licensing approaches proposed by the Commission, a clear majority of applicants indicate a level of support for the Traditional Band Plan, or a variation thereof, either as their primary choice or as an acceptable alternative. It is also clear that the Flexible Band Plan approach is unsuitable as a template for other administrations to follow in developing their own licensing procedures and, thus, is not an acceptable approach for the Commission to adopt in this proceeding. While Iridium commends Globalstar for its creativity in developing a wholly-new licensing proposal, the "All Shared Band Plan," Iridium believes that this proposal's reliance on complex and unproven sharing arrangements requiring

significant changes in system design for some applicants, and at least one Letter of Intent filer with a system under construction, makes it too impractical to implement effectively. Finally, the weight of the comments clearly and unequivocally favor rejection of the Negotiated Entry and Competitive Bidding approaches.

Most of the U.S. applicants – including Boeing, Globalstar, MCHI, and Constellation – all join Iridium in urging the Commission to take steps to address the problems of U.S. licensees' access to global spectrum in the U.S. and elsewhere. Several of these commenters identify concrete steps that the Commission could take to begin to address these problems, and Iridium generally supports their proposals.

The comments of other applicants generally also reflect support of many of the positions Iridium took relative to the Commission's 2 GHz MSS service rules proposals. The applicants collectively support the proposal to treat 2 GHz MSS space segment licensees as non-common carriers. While the commenters support the continued use of blanket licensing for space systems, most applicants – like Iridium – urge the Commission to adopt a longer license term (perhaps as long as twenty years) and a renewal expectancy for licensees. Such measures are appropriate in recognition of the substantial levels of investment that are necessary in order to design, construct, launch, and operate state-of-the-art mobile satellite systems.

Iridium agrees with the majority of applicants in opposing the imposition of enhanced 9-1-1 ("E911") requirements. The MSS industry is still in its infancy. It has not yet developed into a commercial mobile public telephone service like cellular or PCS. Thus, it is premature to impose E911 and specific position location requirements on this service, particularly on the global systems, which will face multiple and possibly conflicting requirements in the absence of international standards.

Iridium also agrees with applicants that urge the Commission to adopt and enforce strict implementation milestones to ensure that proposals are effectuated.

Herein Iridium also addresses other issues discussed in the comments, such as service to unserved and underserved areas and feeder link issues, including protection of radio astronomy.

Finally, the weight of the comments also supports Iridium's position that the Commission should not accommodate AMS(R)S in the 2 GHz MSS band. As NTIA states, no need exists for the service, and the majority of commenters concur that the proposal is inconsistent with the purposes for which the 2 GHz band was allocated for MSS use.

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FEDERAL COMMUNICATIONS COMMISSION
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To: The Commission

REPLY COMMENTS OF IRIDIUM LLC

Iridium LLC ("Iridium"), by its attorneys and pursuant to Section 1.415(c) of the rules of the Federal Communications Commission ("FCC" or "Commission"), 47 C.F.R. § 1.415 (c) (1998), hereby respectfully submits its Reply Comments in response to the comments filed by several parties[1/] concerning issues raised in the Commission's Notice of Proposed Rulemaking in the above-captioned proceeding ("Notice").[2/]

I. INTRODUCTION

In its Comments, Iridium observed that the Commission faces a number of substantial, unprecedented challenges in this proceeding: assigning what is currently the only available global mobile-satellite service ("MSS") spectrum (at least for entities seeking a U.S. space station license);[3/] assigning MSS spectrum to satellite systems of

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1/ Iridium does not herein respond to all comments by all participants. The absence of a response to a given party or comment is not intended, and should not be interpreted, to indicate support for that party or comment.

2/ *In the Matter of The Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band*, FCC 99-50, released March 25, 1999 (*Notice of Proposed Rulemaking* in IB Docket No. 99-81, RM-9328) ("Notice"). A summary of the Notice appeared in the Federal Register on April 7, 1999. 64 FED. REG. 16880 (April 7, 1999).

3/ Iridium also pointed out that there is unused MSS spectrum in the L Band, but the Commission has frozen U.S. applications for that spectrum. *Establishing Rules and Policies for the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-*
(continued...)

diverse technical designs (geostationary ("GSO") and non-geostationary ("NGSO"), global and regional); crafting service rules that do not disadvantage new systems vis-a-vis already-licensed systems; crafting service rules that do not disadvantage U.S.-licensed systems vis-a-vis their non-U.S.-licensed (and apparently even un-licensed) competitors; crafting technical rules that will be applicable to all licensees when their systems have very different technical designs; assigning spectrum in a way that will enable and hopefully ensure a robust, competitive MSS marketplace in the U.S. and globally; assigning spectrum for the global systems in a way that a U.S. band plan can be accepted around the world; and ensuring that what the Commission does in this proceeding is consistent with decisions on relocation of incumbents in the 2 GHz allocation proceeding, ET Docket 95-18.[4/]

Iridium offered comments on a number of the issues raised by the Commission in the Notice, including the various proposed approaches to licensing and the proposed service rules for 2 GHz MSS. The Notice attracted numerous other comments – not just from the nine applicants and letter of intent filers ("LOI Filers") but also from other interested parties. Generally, the commenting parties fall within four groups: the

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3/ (...continued)
band, 11 FCC Rcd 11675 (1996) (*Notice of Proposed Rule Making* in IB Docket No. 96-132) ("*L Band NPRM*"). Iridium recently filed a Motion to Refresh the Record in that proceeding in which it asked the Commission to reopen the record to seek additional comments on matters at issue in that proceeding. Motion to Refresh the Record, filed April 15, 1999, by Iridium LLC and Motorola, Inc., in IB Docket No. 96-132.

4/ *See, e.g., Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile Satellite Service*, FCC 98-309, released November 25, 1998 (*Memorandum Opinion and Order and Third Notice of Proposed Rule Making and Order* in ET Docket No. 95-18).

applicants and LOI filers;[5/] entities with technical concerns at issue in the proceeding; entities with policy concerns raised by issues in the proceeding; and entities with economic interests in the outcome of this proceeding.[6/]

With respect to the comments of the entities that have the most at stake in this proceeding, the applicants, it is clear that most share the concerns and positions Iridium has expressed. It is also clear that all are willing to be flexible with their proposals so that the Commission may authorize all qualified applicants, thus avoiding mutual exclusivity and any consideration of a competitive bidding process.

As Iridium predicted in its Comments, when the Commission considers all relevant issues and comments in light of the challenges it faces, it will reach the conclusion Iridium has reached -- that the Traditional Band Approach is the processing approach that enjoys the greatest support from the applicants and best serves the public interest, allowing the Commission to grant the applications of all qualified systems in a way that can be implemented globally.

Once again, however, adoption of the Traditional Band Plan or any of the proposed approaches will not resolve the issue of how the entities that receive their space segment licenses from the U.S. under any of the options will be able to access 2

5/ Six entities – The Boeing Company ("Boeing"); Celsat America, Inc. ("Celsat); Constellation Communications, Inc., ("Constellation"); Globalstar, L.P. ("Globalstar"); Iridium; and Mobile Communications Holdings, Inc. ("MCHI") – have each applied for licenses from the Commission to operate MSS systems in the portion of the 2 GHz band allocated by the Commission for such use. In addition, three non-U.S. licensed system operators – ICO Services Limited ("ICO"); Inmarsat Ltd. ("Inmarsat"); and TMI Communications and Company, Limited Partnership ("TMI") – have filed "letters of intent" seeking authority to serve the United States with their systems. Unless otherwise specifically noted to the contrary in text, the word "applicant" as used hereinafter shall refer collectively to both of these groups.

6/ One such entity has submitted at least three separate filings through its subsidiaries and affiliates.

GHz spectrum in Europe or in countries outside Europe where one of the LOI filers in this proceeding has already locked up all available 2 GHz global MSS spectrum. In the absence of a plan to work with other countries to harmonize 2 GHz assignments, it appears unlikely that U.S. licensees will be able to obtain outside the U.S. the spectrum that the U.S. assigns. As Iridium has previously urged, the Commission must work with Europe and it must look beyond the instant proceeding and the 2 GHz bands and consider other MSS spectrum, particularly the spectrum at issue in IB Docket No. 96-132, to accommodate all applicants and ensure a fair and competitive environment (in the U.S. and globally) in which like MSS systems have access to like amounts of spectrum between 1 and 3 GHz.

II. THE MOST EFFECTIVE APPROACH FOR LICENSING 2 GHz MSS

A. The Basic Objectives and Concerns

In its initial Comments in this proceeding, Iridium identified the four critical objectives that the Commission's 2 GHz MSS band plan must satisfy. They are:

(1) the creation of a pro-competitive regulatory environment;

(2) assurance of an open telecommunications marketplace consistent with the World Trade Organization ("WTO") Agreement on Basic Telecommunications;

(3) a fair and equitable opportunity for all 2 GHz MSS service providers (both foreign and domestic) to provide services; and

(4) a band assignment plan that can be implemented around the world.[7/]

To achieve these critical objectives, Iridium urged, the Commission must ensure that its licensing scheme and service rules for 2 GHz MSS do not advantage one

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7/ Iridium Comments at 11.

applicant at the expense of others, can be easily understood and followed by licensees, and can be easily and practically coordinated outside the U.S.[8/] Also, Iridium submitted, the Commission must acknowledge the unintended marketplace impact that its regulations can precipitate by affecting the amount of spectrum to which each licensee has access and the timing of that access.[9/] Next, Iridium noted that the Commission's licensing scheme must acknowledge and address the unique challenges presented by the need to relocate disparate groups of incumbent licensees in other services that presently occupy the 2 GHz MSS band.[10/] Finally, Iridium again emphasized the need for the Commission to address the discrepancy that exists between the U.S. MSS spectrum licensing process and processes taking place in other countries and to adopt a licensing framework that will facilitate U.S. licensees' ability to access the spectrum necessary to provide ubiquitous services on a global basis.[11/]

A review of the comments filed by the 2 GHz MSS applicants in this proceeding reveals that Iridium's concerns and observations are shared by others. Boeing, for example, agrees that the Commission should promote a band plan that is internationally compatible.[12/] Indeed, Boeing echoes Iridium's Comments when it states that:

8/ *Id.* at 12.

9/ Iridium specifically observed that a failure on the part of the Commission in this regard could very likely produce unintended and material market distortions carrying potentially long-term consequences for the competitive landscape for the U.S. and global MSS industries. *Id.*

10/ *Id.*

11/ *Id.* at 13-14.

12/ *See* Comments of The Boeing Company, filed June 24, 1999, at 34-35 ("Boeing Comments").

> [t]he Commission should promote an internationally coordinated band sharing approach . . . that aligns spectrum use on a global basis as much as possible. Additionally, the Commission should work to ensure that 2 GHz licensees have spectrum assignments that are comparable in size in every region where they provide services.
>
> Without such a concerted effort, 2 GHz MSS licensees may risk being excluded from operating in some foreign markets. Additionally, individual systems may be 'whipsawed' in negotiations with other administrations. Such an outcome would seriously disadvantage MSS licensees, which need to be able to market the ubiquitous availability of their services.[13/]

Globalstar, too, emphasizes spectrum access as one of its principal concerns. Among the three priorities that it believes the Commission's band plan must address, Globalstar first identifies the need to ensure that each system is provided with sufficient spectrum to effectuate its business plan.[14/] Iridium agrees with Globalstar on this point.

As Iridium demonstrated in its Comments and discusses further below, the Traditional Band Plan approach is the one approach that best satisfies the objectives that should govern assignment of spectrum in this proceeding and the concerns raised by the applicants.

13/ *Id.* at 35. Boeing also observes that:

> [p]ursuing an internationally compatible band plan for the 2 GHz MSS service is particularly important because, as the Commission acknowledges in the NPRM, this is the FCC's first satellite processing round in which non-U.S. licensed systems have been permitted to participate using letters of intent . . . . [S]everal applicants may have already begun coordination with the support of foreign administrations. These applicants will be under no obligation to cooperate with the development of an internationally compatible band plan unless the Commission makes such cooperation a condition of their U.S. operating authority.

Id. at 34.

14/ Comments of Globalstar, L.P., filed June 24, 1999, at 9 ("Globalstar Comments").

B. International Considerations and Coordination

All of the applicants support the Commission's proposal to use engineering solutions, such as an appropriate band plan framework, to avoid mutual exclusivity among the applicants for 2 GHz MSS spectrum. Although, as discussed more fully below, commenters differ on the specific nature of the band plan and other engineering solutions that the Commission should employ, all appear to agree that the Commission possesses the necessary tools to ensure that all 2 GHz MSS applicants will have access to the available spectrum in the U.S.[15/] Accordingly, there is no need or legal basis for the Commission to utilize competitive bidding to award 2 GHz MSS licenses.

However, although the Commission can technically grant all of the present applicants' proposals,[16/] with some modifications, there still remain issues concerning particular segments of the 2 GHz band currently allocated for MSS service in the U.S., relative to the number of proposed MSS systems designed to provide global service, that may make it difficult for the Commission to award sufficient spectrum to enable these applicants actually to provide their services on a global basis. [17/] Moreover, as

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15/ See, e.g., Globalstar Comments at 13; Comments of ICO Services Limited, filed June 24, 1999, at 4, 12 ("ICO Comments"); Comments filed June 24, 1999, by Constellation Communications, Inc., at 2, 6-7 ("Constellation Comments"); Comments of Mobile Communications Holdings, Inc., filed June 24, 1999, at 17 & n.44 ("MCHI Comments"). *See also* Comments of Celsat America, Inc., filed June 24, 1999, at 17-20 ("Celsat Comments").

16/ Iridium did not address in its Comments, and does not address herein, the specific issues relative to the qualifications of Inmarsat, ICO, MCHI, and Constellation that may affect the grantability of their respective applications, because these matters are already separately pending before the Commission. Iridium's comments concerning the rules and policies to be adopted in this proceeding to govern the licensing and operations of 2 GHz MSS systems are made without prejudice to Iridium's arguments relative to the pending applications.

17/ *See* Iridium Comments at 13-14.

Iridium discussed in its Comments, there appear to be significant obstacles outside the U.S. that will affect the ability of a U.S.-licensed system to obtain access to spectrum outside the U.S. The emergence of healthy and robust competition in global mobile satellite services will depend on the ability of U.S.-licensed systems to secure access to adequate spectrum in the U.S. as well as to spectrum allocated for MSS in other countries. For this reason, Iridium agrees with Globalstar that the Commission should consider modifying its proposed policies for the lower L-band to allow applicants for 2 GHz MSS spectrum to use that spectrum, thereby increasing the total amount of spectrum available to the nine applicants.[18/]

In its Comments, Iridium reiterated a request to the Commission that has been a core concern of Iridium's from the very inception of this licensing process: the need for the Commission to work with European regulators and other Administrations to address how U.S.-licensed 2 GHz MSS operators will obtain access to European 2 GHz MSS spectrum in a timely fashion (and to global MSS spectrum generally), as well as the inconsistencies in global MSS spectrum allocations and scarcity of MSS uplink spectrum that aggravate this access problem.[19/] Iridium has been and remains concerned that, unless the U.S. takes aggressive steps to address these problems,

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18/ Globalstar Comments at 9 n.10. Indeed, Iridium alluded to this problem and advanced a similar suggestion at the outset of its Comments, urging the Commission to "work with Europe and . . . [to] look beyond the instant proceeding and the 2 GHz bands and consider other MSS spectrum, particularly the spectrum at issue in IB Docket No. 96-132, to accommodate all applicants and ensure a fair and competitive environment in which like MSS systems have access to like amounts of spectrum between 1 and 3 GHz." Iridium Comments at 3. As Iridium noted, it has recently filed a Motion to Refresh the Record in Lower L-band proceeding in which it asked the Commission to reopen the record to seek additional comments on matters at issue therein. *Id.* at 2 n.2 (citing Motion to Refresh the Record, filed April 15, 1999, by Iridium LLC and Motorola, Inc., in IB Docket No. 96-132).

19/ Iridium Comments at 48-51.

U.S. 2 GHz MSS operators licensed in this proceeding will find themselves frozen out of Europe (and other countries) and unable to provide global services until 2005 at the earliest.

Virtually all of the U.S. applicants proposing global systems in this proceeding voiced an identical desire for action by the Commission.[20/] Globalstar summed up the point, stating:

> [T]he Commission should take whatever steps are necessary in this proceeding and in the international coordination process to ensure that U.S. licensed systems are not penalized as a result of the difference between the [European and U.S.] band plans, and receive access to the same opportunities to provide service in Europe as European systems obtain in the United States.[21/]

As Iridium's Comments observed, the Notice made few concrete proposals concerning what the Commission was prepared to do to address these issues. In the absence of any specific proposals from the Commission, Iridium generally supports many of the proposals for action suggested by MCHI in its comments.[22/] As MCHI indicates, the importance of harmonizing the global regulation of technical characteristics and global and regional 2 GHz MSS spectrum cannot be overemphasized.

In particular, Iridium agrees with MCHI that the Commission should affirmatively engage foreign administrations concerning their domestic 2 GHz MSS satellite system licensing procedures in order to achieve compatibility with the band plan and technical

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20/ Boeing Comments at 34-35, Constellation Comments at 22-23, Globalstar Comments at 47-48, MCHI Comments at 19-22.

21/ Globalstar Comments at 48.

22/ MCHI Comments at 19-22.

requirements to be adopted in this proceeding. Iridium also agrees that the Commission should work with the Executive Branch to use World Trade Organization ("WTO") and General Agreement on Trade in Services ("GATS") enforcement mechanisms to ensure that foreign administrations provide access. The Executive Branch should use all diplomatic and enforcement tools at its disposal to obtain access for U.S. licensees to European 2 GHz MSS spectrum as soon as possible. Finally, the Commission should ascertain immediately the availability of the 2 GHz MSS bands to U.S.-licensed MSS systems in countries other than the U.S.[23/]

C. The Comments Support A Traditional Band Plan Approach

In its Comments, Iridium urged the Commission to adopt a Traditional Band Plan approach for assigning 2 GHz MSS spectrum to the U.S. applicants now seeking space segment licenses from the Commission and the non-U.S. licensed systems seeking authority to serve the United States. Seven of the nine 2 GHz MSS applicants expressed support for the Traditional Band Plan approach, or some variant of it, either as their preferred approach[24/] or as an acceptable alternative in the event the Commission failed to adopt their primary choice.[25/] Given the level of support, and for the reasons stated by Iridium in its Comments and in these Reply Comments, the

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23/ There is reason to be concerned that much of the 2 GHz spectrum allocated for MSS around the world is already being assigned to the exclusion of U.S. applicants. For example, Japan has reportedly already assigned or at least reserved the entire 60 MHz of spectrum allocated for 2 GHz MSS to ICO. *See Japan Pinpoints Priorities for WRC 2000 -- Spectrum for Mobile Phone Service Tops List*, Space News, March 22, 1999, at 4.

24/ *See* Iridium Comments at 21-22, Boeing Comments at 21, Constellation Comments at 7, 19.

25/ *See* Celsat Comments at 12, Globalstar Comments at 20, MCHI Comments at 10, Comments of TMI Communications and Company, Limited Partnership, filed June 24, 1999, at 7 ("TMI Comments").

Commission should adopt a Traditional Band Plan with appropriate modifications to afford greater flexibility, particularly in the recovery and reassignment of spectrum ultimately forfeited by 2 GHz MSS licensees that fail to satisfy their milestone obligations.

1. *Traditional Band Plan*

In advocating the Traditional Band Plan approach, Iridium observed that the methodology provides licensees with the certainty of access to spectrum necessary to encourage investment, simplifies the coordination process, and avoids the perils associated with the Negotiated Entry and Flexible Band approaches, described below. Moreover, Iridium observed, the Traditional Band approach "is easily understood, easily duplicated, easily implemented, and easily coordinated outside the U.S."[26/] Boeing and Constellation each identify similar advantages in the Traditional Band framework. For example, Boeing notes that the Traditional Band approach

> will accommodate each of the applicants, including both GSO and non-geostationary ("NGSO") constellations, along with TDMA and CDMA-based networks. Use of a traditional approach would also greatly facilitate international spectrum coordination by giving U.S. licensees a model that can be pursued in other countries. Furthermore, implementation of a traditional approach could take place in concert with any terrestrial relocation that is required by the Commission.[27/]

Some commenters have criticized the Traditional Band Plan as inferior because of its perceived inflexibility and the risk that it would allow valuable spectrum to lie fallow for a greater period of time if all licensed systems are not ultimately implemented, thus

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26/ Iridium Comments at 22.

27/ Boeing Comments at 21.

delaying expansion opportunities.[28/] However, such perceived risks are minor and are outweighed by the more significant advantages of the Traditional Band Plan approach.

The Traditional Band Plan approach affords each applicant guaranteed access to a greater amount of spectrum (7.50 MHz or 3.75 MHz x2) at the outset, thereby extending the time before which any individual licensee is likely to require additional spectrum. Moreover, as Iridium noted in its Comments, the Traditional Band Plan approach could carry with it some degree of flexibility relative to expansion spectrum. Specifically, Iridium recommended that, in the event an authorized 2 GHz MSS service provider ultimately proved unable to meet its milestones, its spectrum should automatically revert back to the designated band for the system in question.[29/]

Iridium believes that this approach effectively addresses many of the concerns expressed by the critics of the Traditional Band Plan and possesses the virtue of preserving the Commission's flexibility, in the event of such a forfeiture of spectrum, to determine how best to reassign spectrum in light of policies then in place. Iridium has no objection to the proposed modifications to the Traditional Band Plan suggested by Constellation or Globalstar to enhance the potential for licensees using similar signal coding protocols to aggregate and share spectrum under the Traditional Band Plan approach.

2. *Flexible Band Plan*

The second most popular proposal, according to the weight of the comments, is the Flexible Band Plan approach. Four of the commenting applicants – Celsat, MCHI,

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28/ *See, e.g.*, Celsat Comments at 12, Inmarsat Comments at 11, MCHI Comments at 10-11, TMI Comments at 6.

29/ Iridium Comments at 15-16.

Inmarsat, and TMI -- express a primary preference for this approach or some variation of it.[30/] Generally, each contends that the Flexible Band Plan approach most effectively balances the competing concerns of providing applicants with access to spectrum, preventing spectrum from lying fallow, and affording opportunities for licensees to obtain expansion spectrum as their systems grow.

The key advantage of the Flexible Band Plan approach, according to its proponents, is its asserted ability to respond relatively quickly to changing circumstances to adjust spectrum use as necessary, for example, by awarding expansion spectrum or, under the Inmarsat plan, perhaps taking away unused spectrum from an operator. Celsat concedes that the approach gives applicants "considerably less spectrum" than they otherwise seek but holds the promise of eventual expansion spectrum.[31/] Proponents of the Flexible Band Plan also emphasize, as an advantage of the approach, the asserted ability to "guarantee" licensees access to spectrum while also assuring that the spectrum will not lie fallow until the licensee is prepared to commence operations.[32/]

30/ *See generally* Celsat Comments at 6-12, MCHI Comments at 3-9, Inmarsat Comments at 2-10, and TMI Comments at 5-6, 7. Inmarsat and MCHI advocate modified versions of the Flexible Band approach, incorporating changes that they assert makes the approach even more able to respond quickly to changes in the market.

31/ Celsat Comments at 7. Celsat concedes that its proposal would give each system proponent "the absolute minimum amount of spectrum necessary to secure financing and get into operation, while reserving the remaining spectrum only for those services that are actually carrying customer traffic." *Id.* at 8. In addition, Celsat recommends that the Commission adopt a "self-executing" mechanism for awarding spectrum out of the expansion segments of the band commencing between three and four years after all 2 GHz MSS systems are licensed. *Id.* at 9.

32/ This would be accomplished by affording earlier entrants the ability to use other licensees' "guaranteed" spectrum on a secondary basis pending the latters' entry into the band.

As noted in its Comments, Iridium recognizes the potential advantages of the Flexible Approach. However, Iridium believes that the characteristics identified by the commenting parties as the chief advantages of the Flexible Band Plan approach may, in fact, be its principal shortcomings.

One obvious shortcoming is that the Flexible Band Plan approach fails to satisfy one of the basic objectives discussed above: it does not produce a template band plan that can be easily implemented around the world. The very flexibility of the band plan, and the uncertainty surrounding the criteria that would drive expansion band assignment decisions, would make it very difficult if not impossible to harmonize U.S. assignments with those made by other administrations around the world. Foreign administrations considering spectrum access requests from U.S. licensees would naturally be uncertain whether the 5 MHz of spectrum sought by a U.S. applicant represents the totality of spectrum that the applicant would ultimately need or merely represents a baseline subject to upward fluctuation as the FCC makes future expansion spectrum decisions based on potentially parochial U.S. policy objectives.

Moreover, there is no reason to believe or expect that a foreign administration would be persuaded to award a U.S. licensee an additional 2.50 MHz of spectrum in its country simply to "harmonize" its allocation with an expansion band decision based, for example, on the licensee's pledge to provide service to underserved populations in the U.S. Other countries might not decide to reserve spectrum initially, or might adopt policies for allocation of the reserve that address their own national objectives and not those of the U.S. Thus, it is highly unlikely that the Flexible Band Plan approach would be acceptable in other countries.

Another obvious disadvantage is that the Flexible Band Plan approach creates uncertainty as to whether a licensee will actually be able to access its "guaranteed" spectrum at the time it is needed. As Iridium observed in its Comments, the Commission's proposal under the Flexible Band Plan approach to permit earlier entering operators to utilize a later entrant's assigned spectrum on a secondary basis carries the same potential for mischief that makes the Negotiated Entry approach, discussed below, so undesirable. Celsat suggests that this problem may be able to be overcome by use of the special temporary authority ("STA") process.[33/] This is an interesting proposal that is worthy of consideration; however, it appears that it could just as effectively be employed in the Traditional Band Plan context where licensees would have clear and unequivocal rights to their assigned spectrum and where, moreover, they would also be able to receive an additional 2.5 MHz of spectrum to support their system operations from the outset.

The proponents of the Flexible Band Plan do articulate some points that recommend the plan. However, on balance, the Traditional Band Plan approach would better serve the public interest.

3. *"All-Shared" Band Approach (Globalstar Proposal)*

Responding to the Commission's invitation in the Notice for commenters to develop alternative licensing schemes,[34/] Globalstar articulates a licensing approach that represents a dramatic departure from the four licensing schemes the Commission has proposed. Specifically, Globalstar urges the Commission to adopt a licensing approach pursuant to which all proposed systems would be authorized to operate

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33/ Celsat Comments at 7.

34/ *See* Notice, slip op. at 16 ¶ 30.

across the entire 2 GHz MSS band, sharing the spectrum through coordination.[35/] However, this approach differs substantially from the Negotiated Entry Plan. To effectuate Globalstar's proposal, the Commission would require licensees to coordinate with one another in advance to develop basic common parameters for systems operating in the shared 2 GHz MSS spectrum.[36/]

Globalstar contends that its proposed approach is most advantageous because it would: (1) enable the Commission to license all of the proposed systems; (2) afford licensees a guarantee of access to the entire 35 MHz (x2) of spectrum, thus ensuring adequate spectrum to maximize system capabilities; (3) eliminate the risk of fallow spectrum if any licensee failed to go forward; (4) provide more flexibility to global systems to obtain spectrum assignments from other administrations; and (5) encourage rapid development and deployment of 2 GHz MSS systems to avoid the increased complexities of coordination faced by later-launched systems.[37/]

Iridium commends Globalstar for the ingenuity of its proposed "All-Shared Band" approach. The proposal is forward-thinking, and its use of the latest technical advances to enhance effective spectrum management has a clear appeal. Despite the advantages of Globalstar's proposal, however, Iridium believes that the "All-Shared Band" approach simply is too impractical to work effectively in the present environment of 2 GHz MSS applications.

The principal shortcoming of the proposal is that, in order to maximize the potential for sharing, non-U.S. entities with systems already under construction would

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35/ Globalstar Comments at 10, 11.

36/ *Id.* at 11.

37/ *Id.* at 11-12.

have to abandon their system designs and adopt system architectures to which all applicants would agree (assuming that were possible).[38/] For some pending LOI filers, such a redesign could not be completed without considerable expense, if it could be accomplished at all.

Moreover, Iridium has concerns about the details of the sharing arrangements that would have to be adopted and how such a shared band would work. Globalstar's proposal depends upon assumptions regarding spectrum sharing that have not been proven. For example, no detailed studies are publicly available that demonstrate that systems employing different access technologies (*i.e.*, CDMA vs. TDMA) can share spectrum. In light of the need to complete this proceeding and license 2 GHz MSS systems expeditiously to facilitate deployment of new systems, these problems would seem to be insurmountable. Accordingly, as discussed above, the Commission should adopt the Traditional Band Plan approach.[39/]

4. *Negotiated Entry*

The preponderance of comments in this proceeding plainly do not support any further consideration of the Negotiated Entry approach to licensing 2 GHz MSS systems. ICO is the only applicant that supports this proposed approach.[40/] By

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38/ Globalstar concedes as much. *See id.* at 12 ("[T]his plan does not necessarily permit each system to choose its own system design. . . .").

39/ As noted, Globalstar indicates that a Traditional Band Plan would be its next preferred alternative if the Commission determines that it is unable to adopt the "All-Shared Band" approach. Globalstar Comments at 20.

40/ ICO's proposed U.S. service providers filed separate comments, but clearly all should be considered "ICO" for purposes of assessing support by the applicants for proposals in this proceeding. ICO Comments at 6-8; *see also* Comments, filed June 24, 1999, jointly by BT North America, Inc., Hughes Telecommunications and Space Company, Telecomunicaciones de Mexico, and TRW, Inc. (collectively, the "ICO SPs"), at (continued...)

contrast, all of the other commenting applicants uniformly and firmly reject it, echoing the concerns about the same potential for anticompetitive abuses of the process that Iridium raised in its Comments.[41/]

Celsat, for instance, observes that a proposed approach that would give control of the entire band to a single party -- the first to enter -- is "rife with potentially disastrous consequences for the development of meaningful competition" because of the incentive it creates for the early entrant to abuse and delay the coordination process.[42/] Similarly, Globalstar observes that under such an approach "there is very little incentive for operational systems to negotiate in good faith with newly-launched systems" to afford equitable spectrum access to the latter, and, in any event, "the coordination process conducted seriatim is likely to result in a hodgepodge of assigned frequencies that would not necessarily produce the optimal use of spectrum because each system would want to retain its proposed design."[43/] Thus, Globalstar laments that, "[a]s with the flexible band arrangement, there would also be a very real and debilitating uncertainty factor for all systems except the first few."[44/]

40/ (...continued)
4 ("ICO-SPs Comments").

41/ Celsat Comments at 14-17; Constellation Comments at 16-19; Globalstar Comments at 17-20; Inmarsat Comments at 10-11; MCHI Comments at 11-17; TMI Comments at 6-7.

42/ Celsat Comments at 14-15.

43/ Globalstar Comments at 18.

44/ *Id.* at 19. This debilitating uncertainty factor could be compounded if the Commission, in ET Docket 95-18, adopts ICO's preferred approach for relocating incumbents. In such an event, the first entrant into the band would not only be able to delay the entry of later competitors through the coordination process, but could also impose greater relocation costs on them as well by using any available clear spectrum and (continued...)

Most noteworthy is the fact that Inmarsat – a chief beneficiary of negotiated entry in the licensing of past MSS services, and obviously the applicant with the most experience with post-licensing coordination, also opposes the Negotiated Entry approach, raising the very same concerns as those Iridium and others have advanced. Indeed, Inmarsat cites as an example of "the complexities associated with implementing multiple MSS systems in an environment of limited spectrum availability" the Commission's experience in the L-Band – the very proceeding ICO cites as support for the purported virtues of its preferred approach.[45/]

As Iridium stated in its Comments, the Negotiated Entry approach confers a decidedly anti-competitive advantage on one applicant – the first applicant to enter the band. ICO's support for this approach is entirely self-serving. The approach would not enhance but instead would permanently impair the development of robust competition in the MSS services. Clearly, the Commission should reject this approach.

5. *Competitive Bidding*

The parties with the greatest interests at stake in this proceeding, the applicants, virtually all reject use of competitive bidding (auctions) to award authorizations for 2 GHz MSS systems in the United States, demonstrating that this method of assigning licenses would run contrary to existing law and to the public interest. The applicants were supported by the Satellite Industry Association ("SIA"). In its Comments, Iridium also described the uncertainties and financial risks that would result from the use of

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44/ (...continued)
leaving the remainder occupied by incumbents to be cleared by later MSS entrants.

45/ *Compare* Inmarsat Comments at 10 (citing *Notice of Proposed Rulemaking, In the Matter of Establishing Rules and Policies For the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-Band*, 11 FCC Rcd 11675 (1996)) *with* ICO Comments at 23 (International Coordination).

sequential auctions for international satellite spectrum licensing for 2 GHz MSS operators seeking to provide global services.[46/] The comments of other 2 GHz MSS applicants and SIA raised similar and additional concerns.[47/]

The only commenting party to advocate the use of auctions for 2 GHz MSS licensing in the U.S. is BellSouth Corporation ("BellSouth"), neither an applicant nor an LOI filer but an existing user of 2 GHz spectrum. BellSouth advocates use of auctions (coupled with strict financial qualification requirements) ostensibly to ensure that 2 GHz MSS licensees will ultimately be able to perform their relocation payment obligations to Fixed Service ("FS") and Broadcast Auxiliary Service ("BAS") incumbents in the 2 GHz band.[48/]

Iridium finds it strange that BellSouth would advocate auction payments to the U.S. and other countries as a way of ensuring that its own 2 GHz relocation expenses will be reimbursed.[49/] Far from ensuring that a successful 2 GHz applicant will have the resources to meet its relocation obligations, BellSouth's proposed auction framework would spawn an array of additional cost burdens, uncertainties, and financial risks on

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46/ Iridium Comments at 22-26.

47/ Celsat Comments at 17-20, Constellation Comments at 6-7, Globalstar Comments at 12-14, ICO Comments at 11-14, Inmarsat Comments at 12, MCHI Comments at 17-18, TMI Comments at 8.

48/ Comments of BellSouth Corporation, filed June 24, 1999, at 2-8 ("BellSouth Comments").

49/ Iridium and other parties have already demonstrated how the uncertainty and financial risks created by the use of auctions for the licensing of global satellite services would impair 2 GHz MSS applicants' ability to secure financing and drive away investors. One effect of this would almost certainly be to reduce the pool of ultimate licensees, thereby commensurately increasing the pro rata share of relocation expenses that each MSS licensees would be required to bear.

top of those that MSS system operators already confront that would make it less likely that they would have resources available when needed to reimburse incumbents.

More importantly, BellSouth is simply wrong when it attempts to portray the Commission's position on auctions in the Notice as a sudden or abrupt departure from its existing policy.[50/] Citing the *Big LEO Report and Order*, BellSouth contends that the Commission rejected the concerns about "[t]he specter of 'coordinated multinational auctions'" and the "substantial delay in service to U.S. customers" that such auctions could engender as far back as 1994, and asks "what has changed since 1994 that justifies a different conclusion" now.[51/]

To answer BellSouth's query, several things have changed. First, as Iridium noted in its Comments,[52/] the Commission had occasion to revisit the suitability of auctions for purposes of satellite licensing two years later in its *Notice of Proposed Rulemaking* in the Little LEO proceeding and, at that time, recognized the problems created by the uncertainties that such auctions would engender.[53/] The Commission ultimately rejected the use of auctions in the Little LEO proceeding, just as it has proposed to do here.

Second, since 1994, both chambers of Congress have gone on record opposing the use of competitive bidding for assigning global satellite spectrum both in the U.S.

50/ *See* BellSouth Comments at 4-5.

51/ *Id.* at 5.

52/ Iridium Comments at 24-25.

53/ *In the Matter of Amendment of Part 25 of the Commission's Rules to Establish Rules and Policies Pertaining to the Second Processing Round of the Non-Voice, Non-Geostationary Mobile Satellite Service*, 11 FCC Rcd 19841, 19869 ¶¶ 80-81 (1996) (Notice of Proposed Rulemaking in IB Docket No. 96-220) ("*NVNG NPRM*").

and abroad. In fact, only four weeks ago, on July 1, 1999, the U.S. Senate passed S.376, the *Open-market Reorganization for the Betterment of International Telecommunications Act*. Section 633 of S.376 expressly provides that:

> Notwithstanding any other provision of law, the Commission shall not assign by competitive bidding orbital locations or spectrum used for the provision of international or global satellite communications services. The President shall oppose in the International Telecommunications [sic] Union and in other bilateral and multilateral fora any assignment by competitive bidding of orbital locations of spectrum used for the provision of such services.[54/]

Moreover, just last year, the House of Representatives expressed the same sentiment in identical terms in H.R.1872.[55/] The Committee Report for that measure stated that:

> [t]he Committee believes that auctions of spectrum or orbital locations could threaten the viability and availability of global and international satellite services, particularly because concurrent or successive spectrum auctions in the numerous countries in which U.S.-owned global satellite service providers seek downlink or service provision licenses could place significant financial burdens on providers of such services. This problem could be compounded by the fact that the multi-year period required for the design, construction and launch of global and international satellite systems usually requires service providers to invest substantial resources well before they obtain all needed worldwide licenses and spectrum assignments. The uncertainty created by spectrum auctions could disrupt the availability of capital for such projects, and significantly reduce the available benefits offered by global and international satellite systems.[56/]

Finally, as the preponderance of comments plainly demonstrates, the Commission's existing statutory mandate precludes adoption of competitive bidding as a licensing option in this proceeding. Thus, the Commission should reject BellSouth's

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54/ S. 376, 106th Cong., 1st Sess. § 633 (1999).

55/ H.R. 1872, 105th Cong., 2nd Sess. § 649 (1998).

56/ H.R. REP. NO. 494, 105th Cong., 2d Sess. 64-65 (1998).

proposal and adopt the Commission's tentative conclusion not to employ auctions to license 2 GHz MSS systems in the United States.

III. IMPLEMENTATION MILESTONE REQUIREMENTS

Iridium took no position in its Comments with respect to the issue of financial qualifications. The majority of 2 GHz MSS applicants, however, strongly support the Commission's tentative conclusion not to impose such a qualifications standard on 2 GHz MSS applicants.[57/] These commenters reflect a consensus that implementation milestone requirements – firmly enforced – would provide adequate protections against spectrum lying fallow.

By contrast, only Boeing expresses a contrary view, contending that failure to adopt financial qualifications standards could jeopardize the rapid deployment of 2 GHz MSS service, unnecessarily tie up spectrum for years in international coordination proceedings, and facilitate warehousing of spectrum.[58/] Specifically, Boeing urges the Commission to impose on 2 GHz MSS applicants the same financial qualification requirements imposed[59/] on Big LEO applicants.[60/]

57/ Celsat Comments at 20-23, Constellation Comments at 3-4, Globalstar Comments at 6-8, ICO Comments at 5-6, ICO-SPs Comments at 38, Inmarsat at 15-16, MCHI Comments at 22.

58/ *See generally* Boeing Comments at 27-33.

59/ It should be noted that MCHI, in which Boeing is an investor, was not required ultimately to meet any financial requirements with respect to its Big LEO system. Indeed, both MCHI and Constellation were held to be financially unqualified but were issued licenses nonetheless.

60/ *Id.* at 33; *see also Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands*, 9 FCC Rcd 5936, 5948 (1994) ("*Big LEO Report and Order*").

In the past, Iridium has supported financial qualifications as an appropriate safeguard to assure the productive use of spectrum.[61/] However, Iridium is persuaded by the weight of the comments that, under the specific circumstances at issue in this proceeding, financial qualifications requirements are not necessary. In fact, it would be difficult, if not impossible, given the uncertainty of the magnitude of relocation expenses, for an applicant to arrive at a realistic projection of costs, without which a financial showing would be incomplete and inaccurate.

Iridium thus agrees with Globalstar and ICO, which each advocate strenuous implementation milestone performance standards as an alternative to financial qualifications requirements.[62/] Globalstar observes that, "[a]lthough well intended, [the Commission's proposed] milestones do not sufficiently track the progress of a satellite system and cannot readily identify systems that are unlikely to become operational."[63/] "To improve on the monitoring of systems," Globalstar proposes that the Commission adopt as part of its milestones proposal the five-year implementation milestone plan adopted by the Conference of European Postal and Telecommunications Administrations (the "CEPT") for the Big LEO and 2 GHz MSS services.[64/] This seems reasonable, and Iridium does not disagree with Globalstar's proposal; however, it must be recognized and understood that the ability of U.S. 2 GHz MSS licensees to meet such a five-year timetable will depend in large measure on the schedule that the

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61/ *See, e.g.*, Consolidated Comments and Petition to Deny of Iridium LLC, filed May 4, 1998, in FCC File Nos. 179-SAT-P/LA-97(16), *et al.*, at 10-11; Consolidated Reply of Iridium LLC, filed June 18, 1998, in FCC File Nos. 179-SAT-P/LA-97(16), *et al.*, at 11-12.

62/ *See* Globalstar Comments at 35-40, ICO Comments at 17-18.

63/ Globalstar Comments at 36.

64/ *See id.* at 37.

Commission adopts in ET Docket No. 95-18 for relocating incumbent licensees from the band.

When the CEPT established its milestone schedule, it was doing so for spectrum that was already available (1.6/2.4 GHz) or that was to be cleared before MSS entry (half of global 2 GHz MSS bands), unlike the U.S. 2 GHz MSS band. If the Commission adopts the Traditional Band Plan and the relocation framework advocated by Iridium – clearance of the band by a date certain no later than three years from the date on which the Commission grants licenses to MSS operators to operate in the band – the CEPT five-year timetable should be achievable. By contrast, if the Commission adopts ICO's preferred method of phased relocation of incumbents, it is not at all apparent that even a highly motivated licensee would be able to clear its spectrum in sufficient time to enable it to commence service within 60 months of receiving its authorization. Similarly, if the Commission adopts the Negotiated Entry or Flexible Band Plan approach and the ICO phased relocation plan, it is quite likely that only the first system to be constructed could ever meet the five-year milestones.

Whatever milestones are adopted, the Commission must apply and enforce its milestone requirements in an equitable manner. Thus, as Iridium stated in its Comments, milestone calendars should commence concurrently for both applicants and LOI filers. Because Iridium agrees with the Commission that milestone schedules should also commence on the service link grant date rather than the feeder link grant date, Iridium urges the Commission to reject Boeing's proposal to defer commencement